

AMENDMENTS TO THE CLAIMS

1. (Currently Amended) A device for the a damped elastic connection of two parts, the device comprising at least one set of ~~at least~~ two tubular cylindrical sleeves of viscoelastic material fitted one inside the other substantially coaxially with the interposition of a rigid cylindrical and substantially coaxial intermediate ring ~~between two contiguous viscoelastic sleeves of said set~~ so that, ~~for each pair of two contiguous sleeves, one of the~~ said two sleeves is an internal sleeve secured, by an internal cylindrical lateral face, to an external cylindrical lateral face ~~facing it belonging to~~ of an internal rigid ring and, by an external cylindrical lateral face ~~of said internal sleeve~~ to an internal cylindrical lateral face ~~facing it belonging to an~~ of said intermediate rigid ring separating said internal sleeve from the other sleeve of said pair of sleeves, which is an external sleeve secured, by an internal cylindrical lateral face, to an external cylindrical lateral face of said intermediate ring and, by an external cylindrical lateral face ~~of said internal sleeve~~, to an internal cylindrical lateral face of an external rigid ring, an innermost said internal ring and an outermost said external ring ~~of said set~~ being secured integral, respectively, ~~to~~ with an internal armature and ~~to~~ an external armature, each of which is connected to a respective one of two connecting members for connection to said parts,

wherein, ~~for each pair of two contiguous sleeves of said set, the~~ said internal sleeve and the said external sleeve are made of a viscoelastic material which has a shear modulus g_1 and g_2 respectively, and have an axial length L_1 and L_2

respectively, an inside radius R1 and R2 respectively and a thickness e1 and e2 respectively, giving them a geometry such that the following formula is substantially satisfied:

$$g1 \cdot \frac{L1}{\ln(1 + \frac{e1}{R1})} = g2 \cdot \frac{L2}{\ln(1 + \frac{e2}{R2})}$$

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2. (Currently Amended) ~~A device~~ Device according to Claim 1, wherein each of two annular axial end faces of each viscoelastic of said sleeves is shaped as a meniscus delimited by a curved free surface with a concave side facing axially outwards, and said axial length of each sleeve is measured between bottoms of the meniscuses of said two annular end faces of said sleeve.
3. (Currently Amended) ~~A device~~ Device according to Claim 1, wherein the said viscoelastic material of the said sleeves is an elastomer.
4. (Currently Amended) ~~A device~~ Device according to Claim 3, wherein the said elastomer of the said sleeves is a silicone elastomer with a high loss angle value as high as about 45°.

5. (Currently Amended) ~~A device~~ Device according to Claim 1, wherein each ~~viscoelastic~~ sleeve is moulded and preloaded in compression between ~~the two~~ said rigid rings to which said sleeve is secured by its said internal and external cylindrical ~~lateral~~ faces of said sleeve.

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6. (Currently Amended) ~~A device~~ Device according to Claim 5, wherein ~~for at least one pair of contiguous sleeves, the~~ said external sleeve is preloaded by shrink-fitting ~~the corresponding~~ said external rigid ring.
7. (Currently Amended) ~~A device~~ Device according to Claim 6, wherein said shrink-fitting of the said external rigid ring is brought about by plastic deformation of said external rigid ring radially inwards.
8. (Currently Amended) ~~A device~~ Device according to Claim 5, wherein ~~for at least one pair of contiguous sleeves, the~~ said internal sleeve is preloaded by radial expansion of ~~the corresponding~~ said internal rigid ring.
9. (Currently Amended) ~~A device~~ Device according to Claim 8, wherein said radial expansion of said internal rigid ring outwards is brought about by plastic deformation of the said internal rigid ring.

10. (Currently Amended) ~~A device~~ Device according to Claim 1, wherein said set of ~~at least two viscoelastic sleeves is shrink-fitted; into said external armature, arranged as an outer sheath, and/or around said internal armature, of cylindrical shape.~~

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11. (Currently Amended) ~~A device~~ Device according to Claim 1, wherein the ~~outermost~~ said external ring of said set has, at an axial end facing towards the connecting member to which said ~~outermost~~ external ring is connected, a radially thicker part to which ~~the~~ said external armature is removably connected by fixing means.
12. (Currently Amended) ~~A device~~ Device according to Claim 11, wherein the ~~outermost~~ said external ring of said set is shrunk-on by cold rolling of its a part of said external ring extending in line with ~~the outermost~~ said external sleeve of said set.
13. (Currently Amended) ~~A device~~ Device according to Claim 1, wherein at least one of ~~the innermost~~ said internal and ~~outermost~~ said external rings of said set is incorporated into ~~the~~ said internal armature or external armature, respectively.

14. (Currently Amended) ~~A device~~ Device according to Claim 1, wherein said two connecting members are threaded ball ends with screw threads of opposite hand, ~~or~~ of the same hand but different pitch, each of said threaded ends being screwed into a tapped bore of one of ~~the said~~ external and internal armatures, respectively, so as to allow the axial length of the connecting device to be adjusted, locked locking nuts being screwed on to the threaded ends and pressed against the said armatures so as to fix said axial length of the connecting device after its adjustment of the device.
15. (Currently Amended) A method of manufacturing a device for damped elastic connection ~~according to Claim 1, of two parts, the device comprising at least one set of two tubular cylindrical sleeves of viscoelastic material fitted one inside the other substantially coaxially with the interposition of a rigid cylindrical and substantially coaxial intermediate ring so that one of said two sleeves is an internal sleeve secured by an internal cylindrical face to an external cylindrical face of an internal rigid ring and by an external cylindrical face to an internal cylindrical face of said intermediate ring separating said internal sleeve from the other sleeve of said pair of sleeves, which is an external sleeve secured by an internal cylindrical face to an external cylindrical face of said intermediate ring and by an external cylindrical face to an internal cylindrical face of an external rigid ring, said internal ring and said external ring being integral respectively with an internal armature and an external armature, each of which is connected to a respective one of two connecting members for connection to said parts, said~~

internal sleeve and said external sleeve being made of a viscoelastic material which has a shear modulus g1 and g2 respectively, and have an axial length L1 and L2 respectively, an inside radius R1 and R2 respectively and a thickness e1 and e2 respectively, giving them a geometry such that the following formula is substantially satisfied

$$g1 \cdot \frac{L1}{\ln(1 + \frac{e1}{R1})} = g2 \cdot \frac{L2}{\ln(1 + \frac{e2}{R2})}$$

the method comprising for manufacturing said at least one set of ~~at least two viscoelastic sleeves~~, at least the steps consisting in :

- moulding ~~the innermost~~ said internal sleeve of said set between, on the one hand, one of said internal ~~the innermost~~ ring of said set ~~or the~~ and said internal armature and, on the other hand, ~~an~~ said intermediate ring,
- shrinking said intermediate ring so as to preload ~~the innermost~~ said internal sleeve in compression,
- moulding ~~a contiguous~~ said external sleeve around the said intermediate ring and between ~~the latter~~ said intermediate ring and ~~another~~ said external ring which is radially on the outside,
- shrinking said ~~other~~ external ring so as to preload said ~~contiguous~~ external sleeve in compression, ~~and so on until the outermost sleeve of said set is moulded and the outermost ring of said set is shrunk.~~

16. ~~(Cancelled) A method of manufacturing a device for damped elastic connection according to Claim 1, the method comprising, for manufacturing said at least one set of at least two viscoelastic sleeves, at least the steps consisting in:~~

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~~— moulding all the viscoelastic sleeves at the same time, using a very high pressure moulding operation that limits the effect of the post-moulding shrinkage and precompressing the sleeves at the time of moulding;~~

~~— the innermost sleeve of said set being moulded directly on to said internal armature or on to the innermost ring of said set; and~~

~~— the outermost sleeve being moulded directly on to said external armature or on to the outermost ring of said set.~~

17. (NEW) Device according to claim 1, wherein said set of two sleeves is shrink-fitted around said internal armature of cylindrical shape.